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AUTHOR Block, Karen K.
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ABSTRACT

Since "adult learning" is not a well-defined field, the content of any graduate course called "Adult Learning" could be fairly arbitrary. Moreover, when such a course is aimed at applied psychology and education students, learning outcomes such as problem-solving and applications are of utmost importance. Two major curricular topics--course content and learning outcomes-- must be analyzed in order to determine how they are germane to adult learning courses. Discussion of learning outcomes shows that "principle application," the traditional objective of learning courses, is both too simple to follow and unlikely to be valid. A transition to a problem-solving or case approach is suggested. Models for course content can be based on the relative emphasis given learning versus development. Five models can be arranged along a continuum: (1) emphasis on learning types or theories; (2) emphasis on knowledge domains; (3) emphasis on settings/situations; (4) use of a nonstructural developmental approach; and (5) focus on acquisition of general structures or processes. In this content domain, curricular gaps, as well as knowledge needs generated by students of the domain, are important stimulants for research. For example, since students who take these courses are often at midlife, more research on this life stage is desired. (Contains 45 references.) (Author/KC)

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What is Adult Learning?

Course Design Issues in Educational Psychology

Karen K. Block

University of Pittsburgh

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Abstract

Since "Adult Learning" is not a well defined field, the content of any graduate course called "Adult Learning" could be fairly arbitrary. Moreover, when such a course is aimed at applied psychology and education students, learning outcomes such as problem solving and application are of utmost importance. Discussed in this paper are two major curricular topics, course content and learning outcomes, the analyses of which are germane not only to this particular course but to all psychology courses in application oriented contexts.

Discussion of learning outcomes shows that "principle application", the traditional objective of learning courses, is both too simple to follow and unlikely to be valid. A transition to a problem solving or case based approach is suggested. Discussed also are models for course content based on relative emphasis given learning vs. development. These models are arranged along a continuum ranging from a strong emphasis on learning to a strong emphasis on adult development. For each of five models, appropriate reading materials are suggested and their pedagogical strengths and weaknesses discussed.

It is concluded that in this content domain, curricular gaps, as well as knowledge needs generated by students of the domain, are important stimulants for research.

What is Adult Learning?

Course Design Issues in Educational Psychology

The purpose of this paper is to lay bare some of the curricular issues involved in the specification of content and outcomes for a graduate course in Adult Learning, part of an application oriented developmental and educational psychology program, in a School of Education. There is no "field" of adult learning, in the same way that there is a field called adult development, or a field called comparative cognition. Therefore a domain definition is needed. This would guide the selection of appropriate content and differentiate adult learning from overlapping areas, for example, learning in general, and/or the field of adult education. This paper is concerned with defining this knowledge domain as well as with pedagogical issues inherent to all applied psychology courses.

Although learning researchers will admit to puzzlement when asked what adult learning is, education professors seem to know. Adult education, a field within postsecondary education, is believed to be premised upon the identity of the adult (Tennant, 1988, p. 41), so courses in adult learning and development are attractive because they would appear to offer understandings of how adults learn as development proceeds. Popular texts in adult education (for example, Malcolm Knowles' The Adult Learner, A Neglected Species, fourth ed., Gulf Publishing, 1990) contain lists of adult learner characteristics which should be responded to by the teacher of the adult. The problem is that these theories have been developed outside the context of psychological research. Claims about adult learning made by adult educators often do not have empirical support

and are frequently contradicted by modern developmental and learning theory (see Grippin, 1987 and Tennant, 1988).

Being a psychology course, Adult Learning materials must be drawn from mainstream psychology books and journals whose authors are persons regarded as psychologists and contributors to psychological thinking. Psychology being a science requires empirical evaluation or the capability for empirical evaluation, to be present in the ideas and theories expressed. These requirements ruled out rather large chunks of material often traditionally considered in courses on adult learning and written by very well known authors (for example, Knowles, 1990, for the andragogical model and Kolb, 1984, for learning styles and experiential learning).

Three major course design issues will be considered in this paper. First, psychology courses in a professional school, such as a School of Education, within which the course functions have a dual mission–to enable students to understand the content as well as to apply it. Consideration must be given as to how to meet these two objectives. Second, inasmuch as Adult Learning is not a well defined field, some logical way must be found to define the domain, based on topics, themes and emphases. Finally, inasmuch as Adult Learning must function within a programmatic context, explicit points of contact between this and related courses must be made, most notably to developmental courses and content.

Outcomes of the Course

It is common practice within higher education in many places to claim that a course, and more commonly a program of courses, leads to the ability to apply the

content that has been taught. This is notably true of programs in discipline areas having applied in their titles (applied developmental, applied educational). This can be documented by perusing many program brochures, handbooks and lengthier academic descriptions. Although many claim it, few stop to specifically analyze just what it means to apply the discipline topics they teach.

For the field of learning, and more specifically, adult learning, the method of using general principles and then telling students they should be applied is the traditional way of linking discipline content to actual educational practice. These general principles (provide immediate feedback, make instruction meaningful, etc.) and their more contemporary revisions (Foster, 1986), as well as age sensitive versions (link-to-be remembered items to locations using meaningful encodings, West, 1989), are convenient summaries to be remembered and later acted upon. The idea that knowledge taught in courses can be effectively used later in the world outside the course, via recalling taught principles and then applying them, is unfortunately vague, logically cumbersome and empirically incorrect. These are revealed when a detailed model is built to better understand just how such principle application takes place.

Building a computer tutor that is consistent with instructional principles reveals in fact, specific complexities in their use. In a critique of the principle of immediate feedback, Corbett (1987) concluded that effective use of this principle depends on how it is implemented. While building his LISP tutor, Corbett (1987) kept track of what and where the principle of immediate feedback was actually applied or could have been applied yet it was not. The LISP tutor incorporated a detailed production system model

of the student, requiring explicit attention to the consequences for the student, of particular instructional moves. Work on the tutor showed that the principle of immediate feedback was relevant when the effective stimulus could be reinstated into the students working memory. At other times, giving immediate feedback was in conflict with other, potentially more effective principles. For instance, if an improper encoding of content led the student to an incorrect response, it was judged more effective to re-explain the content, so it could be encoded properly, and then lead to a correct response. Moreover, if immediate feedback were always given, Corbett argued, students wouldn't learn to repair their errors. Good students actually using the tutor complained that immediate feedback interrupted their learning, indicating effective use of the principle must be based on the proper "grain size." Instructional principles are apparently tightly bound to their conditions of use.

In summary, close examination of what is involved in this application of a given instructional principle shows that many specific conditions must be considered. On certain occasions where the principle could potentially be used, it actually ought not to be used. To implement the principles effectively according to the LISP experience, it is necessary to consider explicitly their consequences for the student. This implies that if one does use principles as summarizing ideas, and this is then the chosen mode for ensuring application, the principles in and of themselves are in fact insufficient to support effective application.

Yet, could it be true that prospective adult educators (students of adult learning) in any sense instruct other adults by applying such principles as have been taught. To

what extent do cognitive processes of teaching incorporate learning principles taught? Leinhardt and Greeno (1986) examined routines and activity structures of novice and expert mathematics teachers. According to the theory of Leinhardt and Greeno (1986), teaching is a complex cognitive skill involving the construction of plans and the making of rapid on-line decisions (p. 75). The plans are drawn up on the basis of underlying systems of knowledge, lesson structure and subject matter. Plans have goals, actions and decisions as components; in order to elucidate any specific planning nets, the observable teacher and student action chains are organized into activity structures that have goals and subgoals associated with them. For each subgoal, actions used to accomplish it are identified and the functions and/or outcomes reported. Thus the knowledge structure which supports teaching is described as interrelated sets of organized actions (schemata), applied flexibly and with little cognitive effort.

There is one way the above theory could accommodate the idea that teaching is the "application of instructional principles." This is to assume that performance is controlled by the simple agenda to complete the action involved in the principle (i.e., give immediate feedback) and that when one principle is executed, the goal then becomes to execute another (e.g., minimize student working memory load). It is easy to see that a central weakness in this definition of teaching as the "application of principles" is how to get from one principle to the next.

To get from one principle to the next, complexities must be added. But in adding additional assumptions, one must be careful not to change the basic intent to build a

model of teaching in which principles are applied. This orientation to the task influences how we build the model.

We would probably proceed by assuming a list of principles exists from which the teacher samples. Complexity could be built in through different assumptions about how the principles are organized, different assumptions about the nature of the sampling plans and different assumptions about the states of learner. Yet when we have finally developed such a model of an expert teacher, there is every chance it will not be acceptable. The degree of complexity built in might be so great that the concept initially guiding the design is buried. The model built might not seem empirically real when compared to one that is real. It may be found lacking. Moreover, scientists who build artificially intelligent tutors do not proceed from the assumption that teaching is the application of instructional principles. Their designs frequently begin with the specification of several domains of knowledge such as a domain describing what the student knows, the domain of the subject matter, and the domain of pedagogical tactics. This is a completely different way to proceed to build a model of teaching. There is no simple correspondence between these computer tutors and the set of instructional principles (see also above).

In summary, it is not defensible to claim that students will be better adult educators by "applying" a set of principles of adult learning accumulated by the instructor and imparted in the course. This method for supporting use of course knowledge taught is quite inadequate and a new conception is needed.

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New Conceptions for Course Outcome of Knowledge Use

Current work in educational psychology and teacher education offers the needed alternative ideas. One idea is that course outcomes considered as knowledge can be described as declarative, procedural and episodic. Procedural knowledge represented as production systems can allow the action to be that action described by the principle (provide immediate feedback), but it can be contingent upon certain conditions of implementation which are specified in the production system (only when the relevant information is likely to be in short term memory). These structures of knowledge (more fully described in Anderson, 1982, and in Gagnè Yekovich, and Yekovich, 1993) allow needed detail to be included as conditionalizers and determiners of instructional actions.

Much research attention has been paid within educational psychology and cognitive psychology to theoretical analysis and empirical study of the nature of expertise in teaching. As Berliner (1991) notes, studies of expertise (including teacher experts) show expertise consists of episodic or "case" knowledge, in large part, and procedural knowledge too. In principle, case based teaching in learning psychology could function much as case based teaching in medicine, for example, as in the Problem Based Learning curriculum where the case is the primary focus and determines the discipline content to be taught (Norman and Schmidt, 1992). This content is made necessary to consider by the nature of the case itself. Thus, the content of adult learning would be cases of adults learning, where strategies would have to be chosen, obstacles confronted, help of some form sought, and non-learning related issues managed at the same time (eg., avoiding having to be two places at once). The knowledge base of cases for the course would have

to be developed, probably through qualitative studies of adults learning. Important guidance for curriculum design could come from already developed case based curricula in teacher education (Shulman, 1992) and in medicine (Norman and Schmidt, 1992).

It should be noted that the above ideas of using cases with in a course, or as the main content of the course, is one method for implementing what Bierly, Berliner, & Gage (1984) called the problem oriented curriculum. A problem oriented curriculum is distinct from a discipline oriented curriculum in that it is the problems confronted by the professional in the field that drive the curriculum and serve as the starting point. Then the text is consulted as a resource, and the text or a collection of materials serving as a text, does not determine the content presented, such content is only that which is made necessary to consider by the case. In the more usual mode of college instruction, the materials drive what is taught, and the cases serve as examples of the concepts and principles taught. This latter is explicitly to be avoided in a case based approach; presenting concepts and principles beforehand constrain the clinical reasoning and problem solving inimical to the case method.

In summary, ideas about how to develop use of psychological knowledge taught have surpassed the stage of easy claims about "principles" and their "application." Course designers need to consider using the more complicated idea of the production system as a way of conceptualizing knowledge use objectives. Its strength is that it includes attention to the conditions of application, both external as well as internal to the learner. This should be very appealing to developmental psychologists as it is an explicit way to take context into account. In addition, the gathering of a case database should

yield a valuable way to increase cognitive engagement of students, as well as enhance transfer.

Accessibility as a Course Objective

Over time, the material I have assembled for use in courses for psychology and education students have engendered in me certain reactions about how easily students can understand what these materials present. I would summarize my course objectives by stating that a "good" set of materials makes psychology accessible to all students and particularly the education students. The word accessible seems to capture the concept that the materials so selected should be invitingly understandable at a proper technical level. This has not been consistently achievable in the very wide domain of materials I have tried out in my Adult Learning course.

I have two criticisms that I feel are well motivated about the materials which fall readily into the content domain of this course. It was with great excitement that I welcomed publication (1990) of the Handbook of Aging and Cognition (Craik, & Salthouse, 1990). This Handbook would seem to promise a careful chronicling of cognitive changes with aging written in such a way that one could comprehend the scientific evidence for particularities of change, but at the same time read synthesizing commentary giving a broader view, and explanations for, the cognitive changes taking place. It does not seem unreasonable to expect that such chapters as were appropriate for educators ought to be very close to being understandable at a level with some rigor. This is not true. This Handbook, with chapters written by authorities in the field, talks to

other authorities in the field and is quite difficult for students. The material in short is not accessible.

The Handbook features chapters that review selected areas of research on certain cognitive phenomenon. This research, for example the chapters by Hartley (1990) and by Light (1990), and Salthouse (1990), are directly concerned with developing theories of attention, memory and trying to understand the fundamental nature of such processes as aging takes place. A sample question is "How do attentional processes differ for older people?" A variety of hypotheses are evaluated including competition, and interference. A wealth of experiments are reported under controlled conditions which do, or do not support the hypothesis. And the technical subtleties associated with why or why not a certain experiment should favor one or the other hypotheses are explicitly explored. This may be good experimental psychology, but it is quite dense for the education students and actually even for some of the more holistically oriented application bent psychology students. It is NOT pedagogical in any sense, and is quite inappropriate when used in an Adult Learning course because the necessary attempt to link theory to practice has not really been made. I would surely not apply this criterion to papers in scientific journals, but it certainly seems a broader audience ought to be able to understand a Handbook. Instead, these materials distance the applied psychology and the education student.

The second problem presented by materials in the specified domain is the problem of abstractness. This problem obtains in the abstract nature of thinking and writing among selected adult developmental psychologists. Thus it is necessary to take special care selecting developmental work and one would think the selection of a text

book, Adult Cognition and Aging, (Rybash, Hoyer, & Roodin, 1986) would contain material adapted for graduate students. Although especially interesting for the idea of postformal thinking (Chapter 3), nonetheless, there is a dearth of examples..the very grain of which this concept is made. That is, it is claimed by virtue of extensive experiences with adults that the level of postformal thinking is the highest level reached, and this claim seems to emerge from clinical experience, rather than being revealed in, say, some battery of tests. It would thus seem, in an empirical science that the empirical basis for such claims would be liberally presented, including rich and varied examples from many, many domains, so the students could develop a real feel for the nature of what is being described. Instead, the strategy is to describe this stage in other equally inaccessible terms. And the instructor is left with creating such examples on his or her feet with partial understanding thereof, and a little queasy feeling about the exactness of his or her understanding.

In summary, certain scholarly materials which appear as if they would most certainly serve an important pedagogical role in an adult learning course, disappoint. They are written for other audiences and hence hard to understand; they are also abstract and inaccessible. The teacher of adult learning must be inventive, finding ways to help students to understand, and then to make use in problem solving such ideas as have been discovered by the leading theorists and researchers.

Possible Domain Definitions

In the study of learning, there is always emphasized certain main ideas and objectives. To have a "learning" perspective on behavior change means that one seeks a

description of WHAT is learned, and HOW it is learned (Hilgard and Bower, 1975). Thus one is interested theory-wise in the content and processes of learning which are responsible for the behavior change. This does not sharply differentiate learning from developmental, whose objectives can be seen as similar, and whose theorists describe at length the content and processes of development. The difference is in the specificity of the analysis; learning theories have been developed on the basis of experimental analysis, and these empirical verifications yield a certain definiteness to the theoretical ideas (and also a certain narrowness) that is not true of some very major developmental theories. The fact that the theoretical can be readily linked to the empirical leads easily to thoughts of well specified and specific interventions, carried out over a shorter time span, yielding change in given domain of behaviors. Applied psychology and education students are unsure that the experimental work, analytical argument, and theoretical subtleties, which finally lead to the intervention, were entirely necessary, and possibly were excessive, for the effect size the intervention actually had.

There is a sense in which classical learning theories (see Hilgard and Bower, 1975) and their experimental basis are a bit of a culture shock for the applied psychology and the education student. The emphasis on analysis of a learning phenomenon, the objective of accounting for such a phenomenon in terms of more fundamental units, the outlook upon a process in terms of discrete trials and not continuous experience, the use of sometimes contrived tasks, the assumption that change involves effort and practice, and the fact that for all the hard intellectual and scientific work, there is not much more to say except that there should be more research, or that given the inconsistencies, a new

approach is needed. Gregory Kimble once described this tension between what the science has to offer and what these students want. The contrast he developed was between scientists and humanists in psychology--its relevance here is that these students are humanists in their goal and orientations, while the body of work represents the style and values of scientists. It is pedagogically necessary to bridge this communication gap.

Fortunately in modern times, learning studies have increasingly taken developmental ideas into account. A modern text of edited readings (Liben, 1987) explores in a very pointed manner just how learning and development have begun to overlap in some conceptualizations (See for example, Resnick and Sieglar chapters), and still maintain certain distinctions (see Sinclair chapter). This confluence is a decided advantage for persons teaching learning within a professional school. Inasmuch as studies of learning now incorporate knowledge as an important idea, acquisition is studied in natural settings, constructive processes of learning are described, and self regulatory strategies analyzed, this field has become much more appealing to application-oriented students.

In turn, the field of learning itself has profited, becoming richer and more relevant for education. These new content and context sensitive theories add needed detail to the developmental concepts that are their parallels. This detail and elaboration is necessary to support stronger forms of application emerging from those ideas. The fact that analogous ideas exist in both fields establishes potential points of contact, but this is not enough of an idea alone to generate a syllabus which in some way assures that the modern, as well as classical topics of learning have been addressed. And also such a

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syllabus must link up explicitly to developmental ideas in some way. What is needed is a conceptualization of topical coverage in which the fields of learning and/or development are foremost and, depending upon the selected emphasis, alternative syllabuses are possible showing varying degrees of sensitivity to either developmental or learning ideas.

One way of thinking about how such syllabuses might be generated is to imagine a continuum ranging from a very strong learning orientation, which when perturbed more and more with developmental concepts and trends, results in a strong developmental focus. Learning theories would, in the latter, be subordinate to but help to explain the changes taking place. The learning theories would be used in a sense to flesh out details within the processes involved.

The points on such a continuum would seem to be the following:

1. Emphasize learning types or theories. In this approach, the syllabus contains taxonomies of learning types or a collection of theorists. Such types are mentioned in the chapter headings for a graduate level learning text (e.g., Klein, 1991), or they are formed out of the research base and organized into types whose conditions of instruction are different. The classical example of the latter is of course Gagné (1977), and also Gagné, Gagné, and Yekovich (1993) and also Kyllonnen and Shute, (1989). The rationale for just why these taxonomies contain the types they do varies among them, as does their breadth of formulation. To cover all types that adults would be interested in, one usually has to supplement them, especially for motor skills and in the affective/social/interpersonal domain. And the accompanying material needed is a pool of examples of adults learning

that particular type, for all types. Unfortunately, example coverage across any taxonomy is usually variable, and as is the case with the use of such taxonomies, uncertainties arise when trying to classify a given piece of research.

A second way to emphasize the field of learning is to teach the theorists. For a classical orientation see Hilgard and Bower (1975), and for an orientation toward application and education see Gredler (1992), and Hamilton and Ghatala (1994). Included in the latter texts are chapters by developmental theorists, notably Piaget and Vygosky. In this model, the most influential developmentalists are given attention, and learning is linked to developmental through similarity of theorists' ideas. Unfortunately, those developmentalists mentioned are notably child-oriented. Thus, it is necessary to supplement the text with adult developmental theorists. The primary emphasis here is to collect major learning theorists, and then intersperse a few developmentalists.

2. Emphasize knowledge domains. In this approach, the emphasis is upon acquiring the knowledge of a given domain. We want, for adults, a syllabus which would reflect for example the chapters in a text on subject matter learning by E. Gagné, Yekovich, and Yekovich (19xx). These chapters would be not enough, and so we would have to ask the question--what are the knowledge domains of adults in which they display expertise and through learning have progressed from novices. Since this is unanswered presently, what is covered in the syllabus would have to be thought out by the instructor. This is an appealing approach because it is both relevant and interesting (see for example the work on adult experts, such as expert teachers, and the text edited by Chi, Glaser, and Farr 1988). However the transition from novice to expert can be a

central topic in some (other notably developmental) courses, thus overlap must be scouted. Work in this area however has very little to say about HOW the transition takes place, thus application oriented students will be disappointed that few clear descriptions of crucial learning events and processes exist.

3. Emphasize Settings, Situations for Adult Learning. To implement this, one will have to sample widely from the range of formal (higher education, community colleges, senior citizens centers) and informal (Elderhostel, doctor's offices-[-Robinson and Whitfeld, 1985], etc.), and increasingly self regulated (some forms of distance learning) settings in which adults learn and for which research exists. An excellent reference in this model is the text edited by Poon, Rubin and Wilson (1989) of Everyday Cognition in Adulthood and Late Life. This is a fine combination of concern for experimental validity and theory development with evidence from real-life situations. There are liberal suggestions for how to help adults in memory and learning tasks necessary for real-life functioning. Of course there are several problems associated with the exclusive use of this text for an adult learning course; the text is about cognition not learning, although there is overlap; the text embraces the everyday cognition perspective, although complete and accurate information about the nature and frequency of everyday activities is not available (Salthouse, 1992). The text features lengthy and detailed consideration of issues probably having only passing interest to applied students (for example, the question of general abilities for learning versus elementary components). If we wanted to adopt this model, one would certainly start with a consideration of this particular book of readings.

4. Use a nonstructural, developmental approach. One version of this fourth model would emphasize how older differ from younger learners. E.L. Thorndike (Thorndike, Bergman, Tilton, & Woodyard, 1928) and his colleagues initiated comparisons between adult learning and children's learning, wondering whether age brings about any changes in ability to learn. These authors provocatively suggested, upon reporting a number of empirical studies of many varieties of adult learning, that..."Age, in itself is a minor factor in either success or failure. Capacity, interest, energy and time are the major factors" (p.181). There is a sense in which these ideas are fresh today, in that for example, accumulated knowledge, effort and interest are focal ideas in recasting the role of age in learning (see for example, Chi, & Rees (1983), and other papers on the role of learning processes in aging (see papers by Charness and Bieman-Copland, 1992, and Salthouse, 1992). The Handbook of Cognition and Aging noted previously is replete with both empirical generalizations about age differences as well as tentative theoretical accountings for such differences or lack of differences.

Sources for age differences in learning and cognition are not sufficient to generate an Adult Learning syllabus and supporting set of materials. There must be a way to sample the learning domain of content, so that such contrasts or lack thereof are studied across types of learning or task or knowledge domains. Of course the logical problem is, if we choose to tap into the "lived experiences " of children versus adults, that common features of such experiences must be stated and agreed upon, so that comparisons can be made. Given the state of materials that could qualify under this model of content, it is probably best to stay with the variable of age considered for

different types of learning (for example, problem solving in younger and older learners).

Of interest here is a pedagogical device apropos for generating interest in the nature of age differences in learning. Students' beliefs, biases, prejudices, and myths can be assessed via ratings of--true, false, don't know, can't evaluate--and these can be used as the basis for discussion, readings and debate. Table 1 contains the sample survey, with response alternatives shown. Students answer these items thoughtfully, and of course the answer is not the point. What is important is how to analyze and then respond to each stated item on the basis of theory and research. Here, it is possible to use a combination of learning and developmental research and theory, and the students become actively involved. Collaborations can be set up as to how the response to a given item will be developed. Although I did not do it for this exercise, one would want to have some certainty that what is mentioned in the items maps across the needed curricular content in learning.

Insert Table 1 about here

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5. Acquisition of general structures or processes. This last approach to defining content in an Adult Learning course puts adult developmental theory at the forefront. A theory should be selected that has lots of points of contact with modern learning theories. The curricular idea for this model is that adult learning takes place in the context of adult development, and that acquisition of general structures or processes

happens through generalization and discrimination of more specific structures and processes. For example, if one valuable general process that adults learn is critical thinking (Brookfield, 1987) and/or postformal thinking (Rybash et al., 1986), then this model traces its roots to many and varied situations which provide opportunities for such thinking and feedback on its effects. The adult literature on critical thinking is not as tightly connected to psychological theory as one would want, therefore a grounding in relevant theory of cognitive change would have to be given by the instructor. In this regard, a review article by Brewin (1989) would be helpful in that it discusses the relationship of cognitive learning theory to cognitive - behavioral problem solving.

The adult developmental theory of Levinson (1986) conceives of adult development as a process of structure building and changing. These structures underly the varied seasons of a person's life, and changes in the season can be represented theoretically in part by changes in the relationships the person has with the external world (groups, cultures, significant others). The focal theoretical questions concern--what is the nature of a structure; what are the processes by which structures are built and changed? In addition to sharing some major questions with cognitive learning theory, there are other compatibilities: people try to understand their lives, i.e., to "make sense" of them; they can be deeply or only shallowly engaged in living; the learning and development that takes place is integrated across all domains of life: work, home, school, and not to be viewed as an isolated event within a given domain. And finally, it is important to understand transitions out of and into a new season because life is as much a process of change as it is of maintaining stability.

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It is easy to see that current broad theories of development have many important touchstones with more detailed cognitive learning theories, such as schema theory, and knowledge based learning theory and other forms of cognitive learning theory (see Shuell, 1986 for a review of these theories and a comparison to classical learning theory). These latter theories were validated in more controlled, less realistic tasks. To illustrate to students how cognitive learning can happen naturally from real world experience, and not be restricted to the settings studied by theorists we need more citations. We could use, for instance, the work by Russell and Munby, (1991) on reframing (cognitive learning from experience), or the work of Carter (1992), who shows how teachers develop cognitive theories of classroom management.

In summary, the above continuum provides one orderly way to think about the content for an Adult Learning course. The entries on this scale vary from a strong emphasis on learning as the primary content, with a few developmental theories interpolated, to the final entry which placed developmental theory up front and the primary determiner of content, and learning theory in the role of validating the general thrust of the developmental ideas. I have over the years, changed back-and-forth from one model to another. They are all incomplete; they all suffer a materials problem from the point of view of content to be presented as well as outcomes to be developed. Certainly a lack of materials is worrisome because actual class decisions entail more extrapolation and supposition than any scientist would be comfortable with. Nevertheless, this Adult Learning course may be unusual in its attempt to relate development and learning theory in a mainstream graduate course that has been

functioning for some years. It was only recently that the grounds for such relating has been more systematically explored (Liben, 1987).

Course Design Currently in Effect

The present syllabus lies somewhere in the middle of the above continuum, driven neither by learning, or by development. It currently has three sections, and I am thinking of adding a fourth. The sections are represented by thematic ideas. These are--"adults as experts", "adults as cognitively different", and "adults as situated differently". Each of these is a neat rubric for a considerable body of research, which we then try to summarize. The fourth section I will add is "adults have clinical problems" and use the book edited by Dryden and Rentoul (1991) which covers adult clinical problems and their treatment from a cognitive behavioral perspective. It does not bother me to use an intervention text in a basically descriptive course because the methods are in fact instructional, and thus I conceive that we are actually studying learning under instructional conditions, (which are in fact far more carefully specified than are many contexts for learning).

It is disappointing that mid-adulthood seems to be the least studied period in adulthood. Not only are our theories about learning and aging, and the nature of adult development incomplete, many students who take this course are living that very period of their life and are interested in its features. With this gap in knowledge it becomes even more difficult to problem-solve within the context of theory, inasmuch there is not much knowledge about the problems these students experience. Learning researchers are

thereby invited to more intensively study learning within an age range of subjects developmental theorists do not quite understand.

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Table 1

Survey Used to Stimulate Discussion of Potential Differences in Child vs. Adult Learners

Check your response to each statement (True, False, Don't Know, Can't Evaluate).

	True	False	DK	CE
1. Speed of learning is usually faster with adults.	___	___	___	___
2. As age increases, learning with understanding (vs. learning by rote) happens more often.	___	___	___	___
3. Although learning is faster with increased age, memory gets worse.	___	___	___	___
4. Because of their maturity, older adults are more motivated to learn.	___	___	___	___
5. Self-directed learning is unique to adults.	___	___	___	___
6. Many of the actions children have to focus on, adults can do automatically.	___	___	___	___
7. Adults are more likely to transfer what they have learned than are children.	___	___	___	___

	True	False	DK	CE
8. Because of their more extensive experience, adults have more knowledge than children.	___	___	___	___
9. The younger a person is, the more necessary it is to have instruction directed by another person.	___	___	___	___
10. Some skills and types of knowledge cannot be learned proficiently unless learning begins early enough.	___	___	___	___
11. It is more necessary for children, rather than adults, to be "ready" for learning.	___	___	___	___
12. Adults have a stronger sense of personal control over their own learning.	___	___	___	___